

# United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	ON NO. FILING DATE FIRST NAMED I		ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/760,144 01/15/2004		David Y. Kim	ILL01-010-US	7197	
43320 75	90 07/14/2006		EXAMINER		
EVAN LAW GROUP LLC			SONG, MATTHEW J		
566 WEST ADAMS, SUITE 350 CHICAGO, IL 60661			ART UNIT	PAPER NUMBER	
•			1722		
			DATE MAILED: 07/14/2006		

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary  10760,144  Examiner  Matthew J. Jong  1722  - The MAILING DATE of this communication appears on the cover sheet with the correspondence address → Period for Reply  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  - after SIX (9) MONTHS from the mailing date of this communication.  - if No priod for exply is specified door, let maximus thation, point out lappy and will explicit (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite 18X (9) MONTHS from the mailing date of this communication.  - Finite						}		
Art Unit   Matthew J., Song   1722   The MAILING DATE of this communication appears on the cover sheet with the correspondence address − Period for Reply   A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. □ Extensions of time may be evaluable under the provisions of 37 CFR 1.13(a). In no event, however, may a reply be timely filed after SN6 (940KTHS from the maining date of this communication. □ I will be a state of the provision of the provision of 37 CFR 1.73(a). In no event, however, may a reply be timely filed after SN6 (940KTHS from the maining date of this communication. □ Failure to reply within the state of extended period for reply will, by attallate, cause the application in become MARHOONED (as U.S.C. § 133). Any reply received by the filed rether than the three maining date of this communication. □ Failure to reply within the state that the three maining date of this communication, even if timely filed, may reduce any secured placetin term adjustment. See 37 CFR 1.70(b). ■ Status  1) □ Responsive to communication(s) filled on 27 April 2006.  2a) □ This action is FINAL. 2b) □ This action is non-final. ② This action is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) □ Claim(s) 1-45 is/are pending in the application. 4a) Of the above claim(s) 16-31 is/are withdrawn from consideration. ○ □ Claim(s) 1-12 and 32-45 is/are rejected. □ Claim(s) 1-12 and 1-12			Applica	ation No.	Applicant(s)			
Matthew J. Song   1722  - The MAILING DATE of this communication appears on the cover sheet with the correspondence address → Period for Reply  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  Edecised in time may be available under the provision of 37 FR1 1/360, in no event, however, may a reply be timely filed.  If NO period for reply is specified above, the maintaine statution of 37 FR1 1/360, in no event, however, may a reply be timely filed.  If NO period for reply is specified above, the maintaine statution of 37 FR1 1/360, in no event, however, may a reply be timely filed.  If NO period for reply is specified above, the maintaine statution of 40 apply and will explice SIX (5) (5) MONTHS from the malling date of this communication.  Failur for reply within the stor received depend for reply is specified above, the maintaine statution of the maining date of this communication, even If emely filed, may reduce any seared patient am algularistic. Set 37 CPR 1.70(6).  Status  1) □ Responsive to communication (s) filed on 27 April 2006.  2a) □ This action is FINAL.  2b) □ This action is formatication is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) □ Claim(s) 1.45 is/are pending in the application.  4) □ Claim(s) is/are allowed.  6) □ Claim(s) is/are allowed.  6) □ Claim(s) is/are allowed.  7) □ Claim(s) is/are allowed.  Application Papers  9) □ The specification is objected to by the Examiner.  Application Papers  9) □ The provided to the priority documents on the drawingle be held in abeyone. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) so bijected to .See 37 CFR 1.121(d).  11) □ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priorit	045 4-45 0		10/760	,144	KIM ET AL.			
Preiod for Reply  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  Extensions of the may be available under the provisions of 37 CFR 1.13(a). In no went, however, may a reply be timely filed after 50 k (6) MCMTHS from the making date of this communication of 57 CFR 1.13(a). In no went, however, may a reply be timely filed after 50 k (6) MCMTHS from the making date of this communication of 57 CFR 1.13(a). In no went, however, may a reply be timely filed after 50 k (6) MCMTHS from the making date of this communication.  Failuse to provide the yold of the communication of the communication of the communication. Per all the provision of the communication of the communication of the communication of the communication. Per all the provision of the communication of the communication of the communication.  1) Responsive to communication(s) filed on 27 April 2006.  2a) This action is FINAL.  2b) This action is one-final.  3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) Claim(s) 1-45 is/are pending in the application.  4a) Of the above claim(s) 16-37 is/are withdrawn from consideration.  5b) Claim(s) 1-17 and 32-45 is/are rejected.  7claim(s) 1-17 and 32-45 is/are objected to.  10 Claim(s) 1-17 and 32-45 is/are rejected.  7claim(s) 1-17 and 32-45 is/are objected to.  Priority under 35 U.S.C. § 119  12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  13) All by Some * c) None of:  1-1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-		Onice Action Summary	Exami	ner	Art Unit			
Period for Reply  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ③ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  Extensions of time may be available under the provisions of \$7.0781.138(a). In or event, however, may a neply be limitly filled.  Extensions of time may be available under the provisions of \$7.0781.138(a). In or event, however, may a neply be limitly filled.  Extensions of time may be available under the provisions of \$7.0781.138(a). In or event, however, may a neply be limitly filled.  Extensions of time may be available under the provisions of \$7.0781.138(a). In or event, however, may a neply be limitly filled under the provisions of \$7.0781.138(a). In or event, however, may a neply be limitly filled, may reduce any examined selection the provision of the provision of the communication. The provision of t					L			
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  Extended or time may be a vaisable under the provisions of 37 CFR 1.13(e). The overall results of the many and the provision of 37 CFR 1.13(e). The communication of 18 (e) MONTHS from the mailing date of this communication.  If NO period to rapidy is sacrella down, the machinism statutory print of vall gapty and the provision (S. (e) MONTHS from the mailing date of this communication.  If NO period to rapidy is provided by the Office later than three months after the mailing date of this communication, even if timely filled, may reduce any search patient them adjustment. See 37 CFR 1.704(b).  Status  1 ∑ Responsive to communication(s) filled on 27 April 2006.  2a ∑ This action is FINAL. 2b ∑ This action is non-final.  3) ∑ fince this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4 ∑ Claim(s) 1-45 is/are pending in the application.  4a) Of the above claim(s) 18-31 is/are withdrawn from consideration.  5 ∑ Claim(s) 1-45 is/are allowed.  6 ∑ Claim(s) 1-47 and 32-45 is/are rejected.  7 ∑ The specification is objected to by the Examiner.  Application Papers  9 ∑ The specification is objected to restriction and/or election requirement.  Application Papers  9 ∑ The specification is objected to by the Examiner.  Application Papers  10 ∑ The drawing(s) filed on 1 is/are: a) 1 accepted or b) 0 objected to by the Examiner.  Application Papers  11 ∑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  11 ∑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  12 ∑ Acknowledgment is made of a claim for foreign priority under as the exercise of the priority documents have been re			nication appears on	the cover sheet with the d	correspondence addr	ess		
1)⊠ Responsive to communication(s) filed on 27 April 2006.  2a)□ This action is FINAL. 2b)⊠ This action is non-final.  3)□ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4)☑ Claim(s) 1-45 is/are pending in the application.  4a) Of the above claim(s) 18-31 is/are withdrawn from consideration.  5)□ Claim(s)	WHIC - Exter after - If NO - Failu Any r	CHEVER IS LONGER, FROM THE Manisons of time may be available under the provisions SIX (6) MONTHS from the mailing date of this complete period for reply is specified above, the maximum is reto reply within the set or extended period for reply received by the Office later than three months	MAILING DATE OF s of 37 CFR 1.136(a). In no munication. tatutory period will apply an y will, by statute, cause the	THIS COMMUNICATION event, however, may a reply be tired will expire SIX (6) MONTHS from application to become ABANDONE	N. nely filed the mailing date of this com D (35 U.S.C. § 133).			
2a)  This action is FINAL. 2b)  This action is non-final.  3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4)  Claim(s) 1-45 is/are pending in the application.  4a) Of the above claim(s) 18-31 is/are withdrawn from consideration.  5)  Claim(s) is/are allowed.  6  Claim(s) is/are objected to.  8)  Claim(s) is/are objected to.  8)  Claim(s) are subject to restriction and/or election requirement.  Application Papers  9)  The specification is objected to by the Examiner.  10)  The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a)  All b) Some * c) None of:  1.  Certified copies of the priority documents have been received.  2.  Certified copies of the priority documents have been received in Application No.  3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	Status							
2a)  This action is FINAL. 2b)  This action is non-final.  3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4)  Claim(s) 1-45 is/are pending in the application.  4a) Of the above claim(s) 18-31 is/are withdrawn from consideration.  5)  Claim(s) is/are allowed.  6  Claim(s) is/are objected to.  8)  Claim(s) is/are objected to.  8)  Claim(s) are subject to restriction and/or election requirement.  Application Papers  9)  The specification is objected to by the Examiner.  10)  The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a)  All b) Some * c) None of:  1.  Certified copies of the priority documents have been received.  2.  Certified copies of the priority documents have been received in Application No.  3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	1)⊠	Responsive to communication(s) file	ed on 27 April 2006					
closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4)  Claim(s) 1-45 is/are pending in the application 4a) Of the above claim(s) 18-31 is/are withdrawn from consideration.  5)  Claim(s)  is/are allowed. 6)  Claim(s) 1-17 and 32-45 is/are rejected. 7)  Claim(s)  is/are objected to. 8)  Claim(s)  is/are objected to to restriction and/or election requirement.  Application Papers  9)  The specification is objected to by the Examiner. 10)  The drawing(s) filed on  is/are: a)  objected or b)  objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a)  All b)  Some * c)  None of: 1.  Certified copies of the priority documents have been received. 2.  Certified copies of the priority documents have been received in Application No.  application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	·							
All b  Some * c  Disposition of Claims  4) Claim(s) 1-45 is/are pending in the application.  4a) Of the above claim(s) 18-31 is/are withdrawn from consideration.  5) Claim(s) is/are allowed.  6) Claim(s) is/are allowed.  7) Claim(s) is/are objected to.  8) Claim(s) is/are objected to.  8) Claim(s) are subject to restriction and/or election requirement.  Application Papers  9) The specification is objected to by the Examiner.  10) The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) All b) Some * c) None of:  1. Certified copies of the priority documents have been received.  2. Certified copies of the priority documents have been received in Application No  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	3)	<i>,</i>						
4)  Claim(s) 1-45 is/are pending in the application. 4a) Of the above claim(s) 18-31 is/are withdrawn from consideration.  5)  Claim(s) is/are allowed. 6)  Claim(s) 1-17 and 32-45 is/are rejected. 7)  Claim(s) is/are objected to. 8)  Claim(s) is/are objected to. 8)  Claim(s) is/are objected to by the Examiner.  Application Papers  9)  The specification is objected to by the Examiner.  10)  The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a)  All b) Some * c) None of:  1.  Certified copies of the priority documents have been received.  2.  Certified copies of the priority documents have been received in Application No  3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.		closed in accordance with the pract	ice under <i>Ex parte</i>	Quayle, 1935 C.D. 11, 4	53 O.G. 213.			
4a) Of the above claim(s) 18-31 is/are withdrawn from consideration.  5) ☐ Claim(s) is/are allowed. 6) ☒ Claim(s) 1-17 and 32-45 is/are rejected.  7) ☐ Claim(s) is/are objected to. 8) ☐ Claim(s) is/are objected to. 8) ☐ Claim(s) are subject to restriction and/or election requirement.  Application Papers  9) ☐ The specification is objected to by the Examiner.  10) ☐ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) ☐ All b) ☐ Some * c) ☐ None of:  1. ☐ Certified copies of the priority documents have been received in Application No  3. ☐ Copies of the certified copies of the priority documents have been received in Application No  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	Dispositi	on of Claims						
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) All b) Some * c) None of:  1. Certified copies of the priority documents have been received.  2. Certified copies of the priority documents have been received in Application No.  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	5)□ 6)⊠ 7)□ 8)□ Applicati	4a) Of the above claim(s) <u>18-31</u> is/ac Claim(s) is/are allowed. Claim(s) <u>1-17 and 32-45</u> is/are rejected to. Claim(s) is/are objected to. Claim(s) are subject to restrict on Papers The specification is objected to by the	re withdrawn from octed.  ction and/or election  ne Examiner.	n requirement.				
Priority under 35 U.S.C. § 119  12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) ☐ All b) ☐ Some * c) ☐ None of:  1. ☐ Certified copies of the priority documents have been received.  2. ☐ Certified copies of the priority documents have been received in Application No  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.  Attachment(s)  1) ☒ Notice of References Cited (PTO-892)		Applicant may not request that any objection Replacement drawing sheet(s) including	ection to the drawing(s g the correction is req	b) be held in abeyance. Security of the drawing(s) is ob	e 37 CFR 1.85(a). jected to. See 37 CFR			
12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) ☐ All b) ☐ Some * c) ☐ None of:  1. ☐ Certified copies of the priority documents have been received.  2. ☐ Certified copies of the priority documents have been received in Application No  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.  Attachment(s)  1) ☒ Notice of References Cited (PTO-892)					7.00.7 01 707 10	102.		
Attachment(s)  1) Notice of References Cited (PTO-892)  4) Interview Summary (PTO-413)	12) <u></u>	Acknowledgment is made of a claim  All b) Some * c) None of:  1. Certified copies of the priority  2. Certified copies of the priority  3. Copies of the certified copies application from the Internation	documents have by documents have by of the priority documents Bureau (PCT F	een received. een received in Applicati ments have been receive tule 17.2(a)).	on No ed in this National St	age		
1) Notice of References Cited (PTO-892)  4) Interview Summary (PTO-413)	3	ee me attached detailed Office actic	on for a list of the ce	atilied copies not receive	:C.			
1) Notice of References Cited (PTO-892)  4) Interview Summary (PTO-413)			,					
	Attachment	i(s)						
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  Paper No(s)/Mail Date 12/14/04.  Paper No(s)/Mail Date 12/14/04.  Paper No(s)/Mail Date 12/14/04.	3) 🛛 Inform	nation Disclosure Statement(s) (PTO-1449 or	PTO-948) r PTO/SB/08)	5) D Notice of Informal P		52)		

Application/Control Number: 10/760,144 Page 2

Art Unit: 1722

### **DETAILED ACTION**

#### Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-17 and 32-45 in the reply filed on 4/27/2006 is acknowledged.

2. Claims 18-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on 4/27/2006.

## Claim Rejections - 35 USC § 103

- 3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 1722

4. Claims 1-17 and 32-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bray et al (US 6,406,903 from IDS 12/14/04) in view of Shu et al ("In situ measurement and dynamic control of the evaporation rate in vapor diffusion crystallization of proteins" from IDS 12/14/04).

In a method of controlling crystal growth, note entire reference, Bray et al teaches a system which screens up to 40 different evaporation profiles simultaneously using growth chambers in which the growth solution is deployed as a hanging drop (col 6, ln 30-67 and Fig 4). Bray et al also linear evaporation profiles were performed to determine the effect of evaporation rate on crystal growth from solutions of protein and crystallizing agent solutions (col 8, ln 5-67), this clearly suggests applicant's removing solvent from a plurality of solutions containing substantially the same concentration of a compound simultaneously and at different rates to form a solid. Bray et al specifically teaches rates of 0.041, 0.083, 0.2, 0.34, 0.45 and 1.25 microliters/hr (col 8, ln 30-40). Bray et al also teaches the approach to finding suitable conditions that yield high quality protein crystals predominately has been a trial and error process, where more than one thousand crystallization conditions are typically screened (col 2, ln 40-65).

Bray et al does not teaches removing solvent from a plurality of solutions containing different concentration of a compound simultaneously at substantially the same rate.

In a method of dynamic control of protein crystallization, note entire reference, Shu et al teaches automatically obtaining equilibration curves under different crystallization conditions (Abstract). Shu et al also teaches equilibration curves are obviously different for different concentrations, while the other conditions are kept identical (pg 284), this clearly suggests applicant's removing solvent from a plurality of solutions containing different concentration of a

Application/Control Number: 10/760,144

Art Unit: 1722

compound simultaneously at substantially the same rate because the other conditions are kept identical. Shu et al specifically teaches concentrations of 6, 9, 15 and 21% (pg 284).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Bray et al by determining the equilibration curves for different concentration while the other conditions are kept identical, as taught by Shu et al to optimize the process of protein crystallization (Abstract).

Referring to claims 2-3 and 33-34, the combination of Bray et al and Shu et al is silent to the order of removing solvent from the first and second solutions. The selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results (MPEP 2144.03).

Referring to claims 4-6 and 35-37, the combination of Bray et al and Shu et al is silent to the claimed variation of concentration and the claimed the variation in the rate of removing solvent. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Bray et al and Shu et al by using the claimed variations to obtain more experimental data to minimize the need for extrapolation for improved accuracy in the results.

Referring to claims 7-8 and 38-39, the combination of Bray et al and Shu et al teaches a hanging drop crystallization process. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Bray et al and Shu et al to complete the process by removing all of the solution until only the crystal remains.

Referring to claims 9 and 40, the combination of Bray et al and Shu et al is silent to the concentration of the second plurality of solutions is substantially the same as the concentration of

Application/Control Number: 10/760,144 Page 5

Art Unit: 1722

one of the solutions of the first plurality of solutions. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Bray et al and Shu et al by using the optimal concentration obtained from the first plurality of solution.

Referring to claim 10, the combination of Bray et al and Shu et al is silent to the rate of removing solvent from the first plurality of solutions is substantially the same as the rate of removing solvent from one solutions of the second plurality of solutions. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Bray et al and Shu et al by using the optimal rate of removing solvent obtained from the second plurality of solution.

Referring to claims 11-15 and 41-44, the combination of Bray et al and Shu et al teaches protein crystallization comprising a precipitate and water ('903 col 1, ln 25-45 and col 5, ln 10-20).

Referring to claims 16-17 and 45, the combination of Bray et al and Shu et al teaches a system screens up to 40 profiles simultaneously, this clearly suggests at least six.

Referring to claim 32, the combination of Bray et al and Shu et al teaches removing a solvent at substantially the same rate from plurality of solutions containing different concentration (Shu et al pg 284), this clearly suggests applicant's third plurality of solutions. The combination of Bray et al and Shu et al also teaches removing solvent at different rates from a plurality of solutions at the same concentration ('903 col 8, ln 1-67).

#### Conclusion

Art Unit: 1722

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Grabitech ("Design of Experiments Optimization Strategies") teaches one variable at a time approach for experimental optimization, sequential design of experiments, simultaneous design of experiments, and a combination of sequential and simultaneous design of experiments (pg 1-2).

Forsythe et al ("Vapor diffusion, nucleation rates, and the reservoir to crystallization volume ratio" from IDS 12/14/04) teaches vapor diffusion rates is dependant on concentration of solutes present and these factors can be experimentally optimized (pg 1601). Also performing same concentration experiments at different rates (pg 1603).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Song whose telephone number is 571-272-1468. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1722

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

> Matthew J Song Examiner Art Unit 1722

MJS July 10, 2006

**TECHNOLOGY CENTER 1700**